SEQUENCE LISTING

<110> Elan Pharmaceuticals, Inc.
      Zhao, Byron
      Mei, Yu

<120> Neuroprotective Effects of ATF6

<130> 08576.0004-00304

<140> PCT claims priority to US 60/491,565
<141> 2004-07-30

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<151> 2003-08-01

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Cys Thr Val Lys Asp Ile Lys Ala Glu Pro Gln Pro Leu Ser Pro Ala
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Ser Ser Ser Tyr Ser Val Ser Ser Pro Arg Ser Val Asp Ser Tyr Ser
                100   105   110

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Met Ser Pro Leu Ser Leu Tyr Gly Glu Asn Ser Asn Ser Leu Ser Ser
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Pro Glu Pro Leu Lys Glu Asp Lys Pro Val Thr Gly Ser Arg Asn Lys
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Thr Glu Asn Gly Leu Thr Pro Lys Lys Ile Gln Val Asn Ser Lys
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Pro Ser Ile Gln Pro Lys Pro Leu Leu Leu Pro Ala Ala Pro Lys Thr
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Gln Thr Asn Ser Ser Val Pro Ala Lys Thr Ile Ile Ile Gln Thr Val
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Pro Thr Leu Met Pro Leu Ala Lys Gln Gln Pro Ile Ile Ser Leu Gln
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Val Pro Ala Pro Ser Ala Asn Ser Pro Val Asn Gly Lys Leu Ser Val
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Thr Lys Pro Val Leu Gln Ser Thr Met Arg Asn Val Gly Ser Asp Ile
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Ala Val Leu Arg Arg Gln Gln Arg Met Ile Lys Asn Arg Glu Ser Ala
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Cys Gln Ser Arg Lys Lys Lys Lys Glu Tyr Met Leu Gly Leu Glu Ala
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Gly Thr Leu Lys Arg Gln Leu Asp Glu Val Val Ser Glu Asn Gln Arg
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Leu Lys Val Pro Ser Pro Lys Arg Arg Val Val Cys Val Met Ile Val
    370             375             380

Leu Ala Phe Ile Ile Leu Asn Tyr Gly Pro Met Ser Met Leu Glu Gln
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Asp Ser Arg Arg Met Asn Pro Ser Val Gly Pro Ala Asn Gln Arg Arg
            405             410             415

His Leu Leu Gly Phe Ser Ala Lys Glu Ala Gln Asp Thr Ser Asp Gly
            420             425             430

Ile Ile Gln Lys Asn Ser Tyr Arg Tyr Asp His Ser Val Ser Asn Asp
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Lys Ala Leu Met Val Leu Thr Glu Glu Pro Leu Leu Tyr Ile Pro Pro
450             455             460

Pro Pro Cys Gln Pro Leu Ile Asn Thr Thr Glu Ser Leu Arg Leu Asn
465             470             475             480

His Glu Leu Arg Gly Trp Val His Arg His Glu Val Glu Arg Thr Lys
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Ser Arg Arg Met Thr Asn Asn Gln Gln Lys Thr Arg Ile Leu Gln Gly
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Leu Leu Pro Ala Thr Thr His Asn Lys Thr Thr Arg Pro Lys Met Ser
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Ile Val Leu Pro Ala Ile Asn Ile Asn Glu Asn Val Ile Asn Gly Gln
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Lys Pro Pro Leu Gln Pro Lys Pro Val Val Leu Thr Thr Val Pro Met
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            260               265               270

Val Gln Pro Pro Pro Val Ser Pro Val Val Leu Ile Gln Gly Ala Ile
            275               280               285

Arg Val Gln Pro Glu Gly Pro Ala Pro Ser Leu Pro Arg Pro Glu Arg
    290               295               300

Lys Ser Ile Val Pro Ala Pro Met Pro Gly Asn Ser Cys Pro Pro Glu
305               310               315               320

Val Asp Ala Lys Leu Leu Lys Arg Gln Gln Arg Met Ile Lys Asn Arg
            325               330               335

Glu Ser Ala Cys Gln Ser Arg Arg Lys Lys Lys Glu Tyr Leu Gln Gly
            340               345               350

Leu Glu Ala Arg Leu Gln Ala Val Leu Ala Asp Asn Gln Gln Leu Arg
            355               360               365

Arg Glu Asn Ala Ala Leu Arg Arg Arg Leu Glu Ala Leu Leu Ala Glu
    370               375               380

Asn Ser Glu Leu Lys Leu Gly Ser Gly Asn Arg Lys Val Val Cys Ile
385               390               395               400

Met Val Phe Leu Leu Phe Ile Ala Phe Asn Phe Gly Pro Val Ser Ile
            405               410               415

Ser Glu Pro Pro Ser Ala Pro Ile Ser Pro Arg Met Asn Lys Gly Glu
            420               425               430

Pro Gln Pro Arg Arg His Leu Leu Gly Phe Ser Glu Gln Glu Pro Val
            435               440               445
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Gln Gly Val Glu Pro Leu Gln Gly Ser Ser Gln Gly Pro Lys Glu Pro
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Gln Pro Ser Pro Thr Asp Gln Pro Ser Phe Ser Asn Leu Thr Ala Phe
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Pro Gly Gly Ala Lys Glu Leu Leu Leu Arg Asp Leu Asp Gln Leu Phe
                485   490   495

Leu Ser Ser Asp Cys Arg His Phe Asn Arg Thr Glu Ser Leu Arg Leu
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Ala Asp Glu Leu Ser Gly Trp Val Gln Arg His Gln Arg Gly Arg Arg
    515   520   525

Lys Ile Pro Gln Arg Ala Gln Glu Arg Gln Lys Ser Gln Pro Arg Lys
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Lys Ser Pro Pro Val Lys Ala Val Pro Ile Gln Pro Pro Gly Pro Pro
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Glu Arg Asp Ser Val Gly Gln Leu Gln Leu Tyr Arg His Pro Asp Arg
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Ser Gln Pro Ala Phe Leu Asp Ala Ile Asp Arg Arg Glu Asp Thr Phe
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Tyr Val Val Ser Phe Arg Arg Asp His Leu Leu Leu Pro Ala Ile Ser
    595   600   605

His Asn Lys Thr Ser Arg Pro Lys Met Ser Leu Val Met Pro Ala Met
    610   615   620

Ala Pro Asn Glu Thr Leu Ser Gly Arg Gly Ala Pro Gly Asp Tyr Glu
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Glu Met Met Gln Ile Glu Cys Glu Val Met Asp Thr Arg Val Ile His
            645   650   655

Ile Lys Thr Ser Thr Val Pro Pro Ser Leu Arg Lys Gln Pro Ser Pro
        660   665   670

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Tyr Phe Thr Asp Thr Asp Asp Val His Phe Asp Ala Ala His Glu Ala
    50   55   60

Tyr Glu Asn Asn Phe Asp His Leu Asn Phe Asp Leu Asp Leu Met Pro
65   70   75   80

Trp Glu Ser Asp Leu Trp Ser Pro Gly Ser His Phe Cys Ser Asp Met
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Lys Ala Glu Pro Gln Pro Leu Ser Pro Ala Ser Ser Ser Cys Ser Ile
            100   105   110

Ser Ser Pro Arg Ser Thr Asp Ser Cys Ser Ser Thr Gln His Val Pro
        115   120   125

Glu Glu Leu Asp Leu Leu Ser Ser Ser Gln Ser Pro Leu Ser Leu Tyr
130   135   140

Gly Asp Ser Cys Asn Ser Pro Ser Ser Val Glu Pro Leu Lys Glu Glu
145   150   155   160

Lys Pro Val Thr Gly Pro Gly Asn Lys Thr Glu His Gly Leu Thr Pro
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Lys Lys Lys Ile Gln Met Ser Ser Lys Pro Ser Val Gln Pro Lys Pro
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Leu Leu Leu Pro Ala Ala Pro Lys Thr Gln Thr Asn Ala Ser Val Pro
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Ala Lys Ala Ile Ile Ile Gln Thr Leu Pro Ala Leu Met Pro Leu Ala
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Lys Gln Gln Ser Ile Ile Ser Ile Gln Pro Ala Pro Thr Lys Gly Gln
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Thr Val Leu Leu Ser Gln Pro Thr Val Val Gln Leu Gln Ser Pro Ala
            245   250   255

Val Leu Ser Ser Ala Gln Pro Val Leu Ala Val Thr Gly Gly Ala Ala
            260   265   270

Gln Leu Pro Asn His Val Val Asn Val Leu Pro Ala Pro Val Val Ser
        275   280   285

Ser Pro Val Asn Gly Lys Leu Ser Val Thr Lys Pro Val Leu Gln Ser
        290   295   300

Ala Thr Arg Ser Met Gly Ser Asp Ile Ala Val Leu Arg Arg Gln Gln
305   310   315   320

Arg Met Ile Lys Asn Arg Glu Ser Ala Cys Gln Ser Arg Lys Lys Lys
            325   330   335

Lys Glu Tyr Met Leu Gly Leu Glu Ala Arg Leu Lys Ala Ala Leu Ser
            340   345   350

Glu Asn Glu Gln Leu Lys Lys Glu Asn Gly Ser Leu Lys Arg Gln Leu
        355   360   365

Asp Glu Val Val Ser Glu Asn Gln Arg Leu Lys Val Pro Ser Pro Lys
        370   375   380

Arg Arg Ala Val Cys Val Met Ile Val Leu Ala Phe Ile Met Leu Asn
385   390   395   400

Tyr Gly Pro Met Ser Met Leu Glu Gln Glu Ser Arg Arg Val Lys Pro
            405   410   415

Ser Val Ser Pro Ala Asn Gln Arg Arg His Leu Leu Glu Phe Ser Ala
            420   425   430

Lys Glu Val Lys Asp Thr Ser Asp Gly Asp Asn Gln Lys Asp Ser Tyr
        435   440   445

Ser Tyr Asp His Ser Val Ser Asn Asp Lys Ala Leu Met Val Pro Ser
        450   455   460

Glu Glu Pro Leu Leu Tyr Met Pro Pro Pro Cys Gln Pro Leu Ile
465   470   475   480

Asn Thr Thr Glu Ser Leu Arg Leu Asn His Glu Leu Arg Gly Trp Val
            485   490   495

His Arg His Glu Val Glu Arg Thr Lys Ser Arg Arg Met Thr Asn Ser
            500   505   510

Gln Gln Lys Ala Arg Ile Leu Gln Gly Ala Leu Glu Gln Gly Ser Asn
        515   520   525

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Ser Gln Leu Met Ala Val Gln Tyr Thr Glu Thr Thr Ser Ile Ser Arg
    530   535   540

Asn Ser Gly Ser Glu Leu Gln Val Tyr Tyr Ala Ser Pro Gly Ser Tyr
545   550   555   560

Gln Gly Phe Phe Asp Ala Ile Arg Arg Arg Gly Asp Thr Phe Tyr Val
            565   570   575

Val Ser Phe Arg Arg Asp His Leu Leu Leu Pro Ala Thr Thr His Asn
            580   585   590

Lys Thr Thr Arg Pro Lys Met Ser Ile Val Leu Pro Ala Ile Asn Ile
        595   600   605

Asn Asp Asn Val Ile Asn Gly Gln Asp Tyr Glu Val Met Met Gln Ile
    610   615   620

Asp Cys Gln Val Met Asp Thr Arg Ile Leu His Ile Lys Ser Ser Ser
625   630   635   640

Val Pro Pro Tyr Leu Arg Asp His Gln Arg Asn Gln Thr Ser Thr Phe
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Phe Gly Ser Pro Pro Thr Thr Thr Glu Thr Thr His Val Val Ser Thr
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Ile Pro Glu Ser Leu Gln
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Ser Gly Leu Asp Glu Val Ala Glu Glu Gln Ala Gln Leu Phe Arg Cys
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Val Glu Gln Asp Val Pro Phe Asp Ser Ser Ser Leu Asp Val Gly Met
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Asp Val Ser Pro Pro Glu Pro Pro Trp Asp Pro Leu Pro Ile Phe Pro
65   70   75   80

Asp Leu Gln Val Lys Ser Glu Pro Ser Ser Pro Cys Ser Ser Ser Ser

                85   90   95

Leu Ser Ser Glu Ser Ser His Leu Ser Thr Glu Pro Pro Ser Gln Val
            100   105   110

Pro Gly Val Gly Glu Val Leu His Val Lys Met Glu Ser Leu Ala Pro
            115   120   125

Pro Leu Cys Leu Leu Gly Asp Asp Pro Ala Ser Pro Phe Glu Thr Val
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Gln Ile Thr Val Gly Ser Ala Ser Asp Asp Leu Ser Asp Ile Gln Thr
145   150   155   160

Lys Leu Glu Pro Ala Ser Pro Ser Ser Ser Val His Ser Glu Ala Ser
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Leu Leu Ser Ala Asp Ser Pro Ser Gln Pro Phe Ile Gly Glu Glu Val
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Leu Glu Val Lys Thr Glu Ser Pro Ser Pro Pro Gly Cys Leu Leu Trp
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Asp Val Pro Ala Ser Ser Leu Gly Ala Val Gln Ile Ser Met Gly Pro
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Ser Pro Asp Ser Ser Ser Gly Lys Ala Pro Ala Thr Arg Lys Pro Pro
225   230   235   240

Leu Gln Pro Lys Pro Val Val Leu Thr Thr Val Pro Val Pro Pro Arg
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Ala Gly Pro Thr Ser Ala Ala Val Leu Leu Gln Pro Leu Val Gln Gln
            260   265   270

Pro Ala Val Ser Pro Val Val Leu Ile Gln Gly Ala Ile Arg Val Gln
            275   280   285

Pro Glu Gly Pro Ala Pro Ala Ala Pro Arg Pro Glu Arg Lys Ser Ile
    290   295   300

Val Pro Ala Pro Met Pro Gly Asn Ser Cys Pro Pro Glu Val Asp Ala
305   310   315   320

Lys Leu Leu Lys Arg Gln Gln Arg Met Ile Lys Asn Arg Glu Ser Ala
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Cys Gln Ser Arg Arg Lys Lys Lys Glu Tyr Leu Gln Gly Leu Glu Ala
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Arg Leu Gln Ala Val Leu Ala Asp Asn Gln Gln Leu Arg Arg Glu Asn

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Ala Ala Leu Arg Arg Arg Leu Glu Ala Leu Leu Ala Glu Asn Ser Gly
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Leu Lys Leu Gly Ser Gly Asn Arg Lys Val Val Cys Ile Met Val Phe
385                 390                 395                 400

Leu Leu Phe Ile Ala Phe Asn Phe Gly Pro Val Ser Ile Ser Glu Pro
                405                 410                 415

Pro Pro Ala Pro Met Ser Pro Arg Met Ser Arg Glu Glu Pro Arg Pro
                420                 425                 430

Gln Arg His Leu Leu Gly Phe Ser Glu Pro Gly Pro Ala His Gly Met
        435                 440                 445

Glu Pro Leu Arg Glu Ala Ala Gln Ser Pro Gly Glu Gln Gln Pro Ser
    450                 455                 460

Ser Ala Gly Arg Pro Ser Phe Arg Asn Leu Thr Ala Phe Pro Gly Gly
465                 470                 475                 480

Ala Lys Glu Leu Leu Leu Arg Asp Leu Asp Gln Leu Phe Leu Ser Ser
                485                 490                 495

Asp Cys Arg His Phe Asn Arg Thr Glu Ser Leu Arg Leu Ala Asp Glu
            500                 505                 510

Leu Ser Gly Trp Val Gln Arg His Gln Arg Gly Arg Arg Lys Ile Pro
        515                 520                 525

His Arg Ala Gln Glu Arg Gln Lys Ser Gln Leu Arg Lys Lys Ser Pro
    530                 535                 540

Pro Val Lys Pro Val Pro Thr Gln Pro Pro Gly Pro Pro Glu Arg Asp
545                 550                 555                 560

Pro Val Gly Gln Leu Gln Leu Tyr Arg His Pro Gly Arg Ser Gln Pro
                565                 570                 575

Glu Phe Leu Asp Ala Ile Asp Arg Arg Glu Asp Thr Phe Tyr Val Val
            580                 585                 590

Ser Phe Arg Arg Asp His Leu Leu Leu Pro Ala Ile Ser His Asn Lys
        595                 600                 605

Thr Ser Arg Pro Lys Met Ser Leu Val Met Pro Ala Met Ala Pro Asn
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Glu Thr Val Ser Gly Arg Gly Pro Pro Gly Asp Tyr Glu Glu Met Met
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        Gln Ile Glu Cys Glu Val Met Asp Thr Arg Val Ile His Ile Lys Thr
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        Ser Thr Val Pro Pro Ser Leu Arg Lys Gln Pro Ser Pro Ser Pro Gly
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        Asn Thr Thr Gly Gly Pro Leu Pro Gly Ser Ala Ala Ser Pro Ala His
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